We claim:

1. A capacitive load drive recovery circuit comprising:

a transformer having a primary coil connected between an output terminal to be connected to a capacitive load and a first reference potential and a secondary coil connected to the output terminal and a second reference potential;

a first switch circuit connected in series to the primary coil;

a second switch circuit connected in series to the secondary coil; and

a power supply switch circuit connected between the output terminal and a drive power supply.

2. A capacitive load drive recovery circuit, as set forth in claim 1, further comprising a third switch circuit connected between the output terminal and the first reference potential.

3. A capacitive load drive recovery circuit, as set forth in claim 2, wherein the third switch circuit is composed of a one-way conductive element.

4. A capacitive load drive recovery circuit, as set forth in claim 1, wherein the second switch circuit is composed of a one-way conductive element.

5. A capacitive load drive recovery circuit, as set forth in claim 1, wherein the first reference potential and the second reference potential are equal.

6. A capacitive load drive recovery circuit, as set forth in claim 1, further comprising: a fourth switch circuit connected between the connection point where the primary coil and the first switch are connected; and a fifth reference potential.

7. A capacitive load drive recovery circuit, as set forth in claim 1, further comprising: a fourth switch circuit connected between the connection point where the primary coil and the first switch are connected; and the drive power supply.

8. A capacitive load drive recovery circuit, as set forth in claim 6, wherein the fourth switch circuit is composed of a one-way conductive element.

9. A capacitive load drive recovery circuit, as set forth in claim 1, further comprising an impedance circuit connected to a path to which the power supply switch circuit is connected.

10. A capacitive load drive recovery circuit comprising:

a first switch circuit, a coil and a second switch circuit connected in series between an output terminal connected to a capacitive load and a first reference potential;

a third switch circuit connected between the connection point where the first switch circuit and the coil are connected, and the first reference potential;

a fourth switch circuit connected between the connection point where the coil and the second switch circuit are connected, and the output terminal; and

a power supply switch circuit connected between the output terminal and a drive power supply.

11. A capacitive load drive recovery circuit, as set forth in claim 10, wherein the third switch circuit is composed of a one-way conductive element.

12. A capacitive load drive recovery circuit, as set forth in claim 10, wherein the fourth switch circuit is composed of a one-way conductive element.

13. A capacitive load drive recovery circuit, as set forth in claim 10, further comprising an impedance circuit connected to a path to which the power supply switch circuit is connected.

14. A capacitive load drive circuit comprising:

a plurality of capacitive loads;

a first drive power supply;

a second drive power supply; and

a plurality of pairs of first and second

drive elements connected in series between the first drive power supply and the second drive power supply, driving the plurality of capacitive loads, respectively, and the connection point of which is being connected to the capacitive loads,

wherein either one of the first and second drive power supplies is the capacitive load drive recovery circuit set forth in claim 1.

15. A capacitive load drive circuit comprising:

a plurality of capacitive loads;

a first drive power supply;

a second drive power supply; and

a plurality of pairs of first and second drive elements connected in series between the first drive power supply and the second drive power supply, driving the plurality of capacitive loads, respectively, and the connection point of which is being connected to the capacitive loads,

wherein either one of the first and second drive power supplies is the capacitive load drive recovery circuit set forth in claim 10.

16. A capacitive load drive circuit, as set forth in claim 14, further comprising: a current detection circuit being provided in a path to which the power supply switch circuit of the capacitive load drive recovery circuit used as one of the first and second drive power supplies and detecting a current flowing out from the drive power supply; and a control circuit controlling each switch circuit of the capacitive load drive recovery circuit according to the detection result of the current detection circuit.

17. A capacitive load drive circuit, as set forth in claim 15, further comprising: a current detection circuit being provided in a path to which the power supply switch circuit of the capacitive load drive recovery circuit used as one of the first and second drive power supplies and detecting a current flowing out

from the drive power supply; and a control circuit controlling each switch circuit of the capacitive load drive recovery circuit according to the detection result of the current detection circuit.

18. A capacitive load drive circuit, as set forth in claim 14, further comprising a control circuit calculating an estimated value of power consumption in a drive circuit from information about changes in each drive state of the plurality of capacitive loads and controlling each switch circuit of the capacitive load drive recovery circuit according to the calculated estimated value of the power consumption.

19. A capacitive load drive circuit, as set forth in claim 15, further comprising a control circuit calculating an estimated value of power consumption in a drive circuit from information about changes in each drive state of the plurality of capacitive loads and controlling each switch circuit of the capacitive load drive recovery circuit according to the calculated estimated value of the power consumption.

20. A capacitive load drive circuit, as set forth in claim 14, further comprising: a temperature detection circuit detecting temperature of a part of the capacitive load drive circuit; and

a control circuit controlling each switch circuit of the capacitive load drive recovery circuit according to the temperature detected by the temperature detection circuit.

21. A capacitive load drive circuit, as set forth in claim 15, further comprising: a temperature detection circuit detecting temperature of a part of the capacitive load drive circuit; and

a control circuit controlling each switch circuit of the capacitive load drive recovery circuit according to the temperature detected by the temperature detection circuit.

22. A plasma display apparatus comprising:

a plasma display panel having a plurality of scan electrodes extending in a first direction and a plurality of address electrode arranged so as to intersect the scan electrodes;

a scan electrode drive circuit driving the plurality of scan electrodes; and

an address electrode drive circuit driving the plurality of address electrodes,

wherein the power supply of the address electrode drive circuit is the capacitive load drive recovery circuit set forth in claim 1.

23. A plasma display apparatus comprising:

a plasma display panel having a plurality of scan electrodes extending in a first direction and a plurality of address electrode arranged so as to intersect the scan electrodes;

a scan electrode drive circuit driving the plurality of scan electrodes; and

an address electrode drive circuit driving the plurality of address electrodes,

wherein the power supply of the address electrode drive circuit is the capacitive load drive recovery circuit set forth in claim 10.

24. A capacitive load drive circuit comprising:

a plurality of capacitive loads;

a first drive power supply;

a second drive power supply; and

a plurality of pairs of first and second drive elements connected in series between the first drive power supply and the second drive power supply, and the connection point of which is connected to the plurality of capacitive loads, respectively,

wherein either one of the first and second drive power supplies is a power recovery power supply equipped with a reactive power recovery circuit, and

wherein the power recovery power supply comprises a power detection circuit detecting power

consumption in the drive circuit and a control circuit controlling the action of the reactive power recovery circuit according to the detection result of the power detection circuit.

25. A capacitive load drive circuit, as set forth in claim 24, wherein the power detection circuit comprises a current detection circuit detecting a current to be supplied to the power recovery power supply and calculates power consumption in the drive circuit according to the detection result of the current detection circuit.

26. A capacitive load drive circuit, as set forth in claim 24, wherein the power detection circuit calculates power consumption in the drive circuit from information about changes in each drive state of the plurality of capacitive loads.

27. A capacitive load drive circuit, as set forth in claim 24, wherein the power detection circuit comprises a temperature detection circuit detecting the temperature of a part of the drive circuit and calculates a power consumption in the drive circuit according to the temperature detected by the temperature detection circuit.

28. A capacitive load drive circuit comprising:

a capacitive load having two drive terminals;

a first drive power supply;

a second drive power supply;

a first switch circuit, a coil and a second switch circuit connected in series between the two terminals of the capacitive load;

a third switch circuit connected between either terminal of the capacitive load and either terminal of the first drive power supply;

a fourth switch circuit connected between either terminal of the capacitive load and the other terminal of the first drive power supply;

a fifth switch circuit connected between the connection point where the first switch and the coil are connected, and the other terminal of the first drive power supply;

a sixth switch circuit connected between the other terminal of the capacitive load and either terminal of the second drive power supply;

a seventh switch circuit connected between the other terminal of the capacitive load and the other terminal of the second drive power supply; and

an eighth switch circuit connected between the connection point where the second switch and the coil are connected, and the other terminal of the second drive power supply.

29. A capacitive load drive circuit comprising:

a capacitive load having two drive terminals;

a first drive power supply;

a second drive power supply;

a first switch circuit connected between either terminal of the capacitive load and either terminal of the first drive power supply;

a second switch circuit connected between either terminal of the capacitive load and the other terminal of the first drive power supply;

either coil of a transformer and a third switch circuit connected in series between either terminal of the capacitive load and the other terminal of the first drive power supply;

a fourth switch circuit connecting the two terminals of the first drive power supply selectively to a first reference potential;

a fifth switch circuit connected in parallel to the second switch circuit;

a sixth switch circuit connected in parallel to the third switch circuit;

a seventh switch circuit connected between

the other terminal of the capacitive load and either terminal of the second drive power supply;

an eighth switch circuit connected between the other terminal of the capacitive load and the other terminal of the second drive power supply;

the other coil of the transformer and a ninth switch circuit connected in series between the other terminal of the capacitive load and the other terminal of the second drive power supply;

a tenth switch circuit connecting the two terminals of the second drive power supply selectively to a first reference potential;

an eleventh switch circuit connected in parallel to the eighth switch circuit; and

a twelfth switch circuit connected in parallel to the ninth switch circuit.

30. A plasma display apparatus comprising:

a plasma display panel having a plurality of first and second electrodes arranged alternately and extending in a first direction and a plurality of address electrodes arranged so as to intersect the first and second electrodes;

a first electrode drive circuit driving the plurality of the first electrodes;

a second electrode drive circuit driving the plurality of the second electrodes; and

an address electrode drive circuit driving the plurality of the address electrodes,

wherein the second electrode drive circuit comprises a scan circuit applying a scan pulse sequentially to the plurality of the second electrodes and a common drive circuit applying a sustain pulse simultaneously to the plurality of the second electrodes via the scan circuit,

wherein the first electrode drive circuit and the common drive circuit are plasma display apparatuses applying the sustain pulse alternately to the

plurality of the first and second electrodes, and

wherein the first electrode drive circuit and the common drive circuit are the capacitive load drive circuits as set forth in claim 28.

31. A plasma display apparatus comprising:

a plasma display panel having at least a pair of electrodes making up a capacitive load and causing discharge to occur between the pair of electrodes; and

a capacitive load drive circuit connected at least either electrode of the pair of electrodes and driving the capacitive load,

wherein the capacitive load drive circuit has a coil circuit connected between an output terminal to be connected to the one of electrodes and a reference potential and controls so that when the energy stored in the capacitive load is discharged, the energy is stored in the coil circuit and at the same time the energy is retained in the coil circuit while the current flowing through the coil circuit is increasing, and when the capacitive load is recharged, the stored energy is released while the current flowing through the coil circuit is decreasing.

32. A plasma display apparatus, as set forth in claim 31, wherein a switch circuit maintaining the discharged state of the capacitive load after the capacitive load is discharged and until it is recharged, and a power supply switch circuit maintaining the charged state of the capacitive load after the capacitive load is charged and until it is discharged again.

33. A plasma display apparatus, as set forth in claim 32, wherein the switch circuit is composed of a one-way conductive element.

34. A plasma display apparatus, as set forth in claim 32, wherein the power supply switch circuit is controlled so as to be brought into a conductive state before the charging of the capacitive load is completed.

35. A plasma display apparatus, as set forth in claim 32, wherein the energy is stored in the coil circuit via the one of the electrodes when the energy stored in the capacitive load is discharged and the released energy is supplied to the capacitive load via the one of the electrodes when the capacitive load is recharged.

36. A plasma display apparatus, as set forth in claim 32, wherein the capacitive load drive circuit is connected between the one of electrodes and the other of the pair of electrodes, stores the energy in the coil circuit via the one of electrodes when the energy stored in the capacitive load is discharged, and supplies the released energy to the capacitive load via the other electrode when the capacitive load is recharged.

37. A plasma display apparatus comprising:

a plasma display panel having a plurality of scan electrodes and a plurality of address electrodes arranged so as to intersect the scan electrodes;

a scan electrode drive circuit driving the plurality of scan electrodes; and

an address electrode drive circuit driving the plurality of address electrodes,

wherein the address electrode drive circuit has a coil circuit connected between an output terminal to be connected to the address electrode and a reference potential and controls so that when the energy stored in the capacitive load consisting of the address electrodes and the scan electrodes is discharged, the energy is stored in the coil circuit and at the same time the energy is retained in the coil circuit while the current flowing through the coil circuit is increasing, and when the capacitive load is recharged, the stored energy is released while the current flowing through the coil circuit is decreasing.